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DISCUSSION PAPER No. 14

Reviving Trade Routes

Evidence from the Maputo Corridor

Sandra Sequeira
Olivier Hartmann
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SSATP
Africa Transport
Policy Program

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November 2014



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Sound policies lead to safe, reliable, and cost-effective transport, freeing people to lift themselves out of poverty and helping countries to compete internationally.

* * * * *

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Cover Photo: Maputo Port Development Company



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Acronyms and abbreviations

ANE	Associacao Nacional de Estradas (Mozambique roads agency)
BOT	Build-Operate-Transfer
CHM	Companhia de Hidrocarbonetos de Moçambique
CFM	Caminhos de Ferro de Moçambique (Mozambique Ports and Railways parastatal)
CMI	Corridor management institution
CSIR	Council for Scientific and Industrial Research
DBSA	Development Bank of Southern Africa
DTI	Department of Trade and Industry (South Africa)
FDI	Foreign Direct Investment
IDC	Industrial Development Company
IFC	International Finance Corporation
LSCI	Liner Shipping Connectivity Index
MCC	Maputo Corridor Company
MCLI	Maputo Corridor Logistics Initiative
MDC	Maputo Development Corridor
MDHC	Mersey Docks and Harbour Company
MIPS	Mozambique International Port Services
MOZAL	Mozambique Aluminium (smelter)
MPDC	Maputo Port Development Company
NEPAD	New Partnership for Africa's Development
NLPI	New Limpopo Bridge Projects Investments
OECD	Organization for Economic Co-operation and Development
PIDA	Program for Infrastructure Development for Africa
PPP	Public-Private Partnership

REC	Regional economic community
RGR	Ressano Garcia Railway
RSDIP	Regional SDI Program
SADC	South African Development Community
SANRAL	South Africa National Roads Agency Limited
SARS	South African Revenue Services
SDI	Spatial Development Initiative
SR	Swaziland Railways
SSA	Sub-Saharan Africa
TFR	Transnet Freight Rail
TRAC	Trans African Concession

Overview

Most trade moves along a few high-density routes: the corridors. Improving their performance has emerged as a necessary ingredient for growth and integration into the regional and global economy. In Africa, this is recognized at the continental level, where PIDA for instance, the Program for Infrastructure Development in Africa, has identified 42 corridors that should form a core network for regional integration and global connectivity.

Several distinctive features appear to be necessary conditions for a successful corridor, namely (i) a combination of public and private investments to improve infrastructure, (ii) an institutional framework to promote and facilitate coordination, (iii) a focus on operational efficiency of the logistics services and infrastructure, and (iv) a proven economic potential. However, the presence of all the ingredients is not a sufficient condition: it is critical to also make sure that the fundamentals are appropriate and in sync and their management and coordination are sound.

Reviewing the experience of an apparently successful corridor can help us learn the optimal mix and trade-offs among the ingredients and enable replication of success on other corridors. The Maputo Corridor, which had fallen in disuse during the troubled period in Mozambique, is widely regarded as one the successful corridors. It has experienced tremendous growth, attracted large industrial and transport investments, and strengthened ties between neighboring countries over its almost two decade long history since the end of the apartheid era in South Africa and the Peace Agreement in Mozambique. What makes

the Maputo Corridor ideal as a source of learning lessons is that it has many contrasting facets—it is an established trade route with a development focus, as well as an hinterland corridor, a mining and resource-based corridor—whereas other corridors may have a far less diverse nature. The lessons that can be learnt from the Maputo Corridor thus have relevance for a wider variety of corridors.

The lessons from the Maputo Corridor can help the regional economic communities (REC), countries, corridor users and development partners to better focus their corridor strategies to maximize economic growth. The present work focuses on three aspects of its revival:

- Corridors as enablers of trade and economic development
- Improvement of logistics through investments and reforms
- Institutional framework adapted according to objectives

The notion of corridors has evolved over time, expanding its scope to include a wider economic and development perspective. Initially, corridors were largely seen as mere transport routes. That narrow notion evolved with the realization that logistics services, and the institutional and regulatory framework governing services were equally important. Finally, the Spatial Development Initiative (SDI) developed by South Africa after the end of the apartheid (equivalent to development corridor concept used elsewhere) further expanded that notion to include the demand side through investments in unrealized economic potential. It advocates for a holistic approach, comprised of several sectors, typically transport and one of the productive industries such as mining or agriculture. However, the approach has also its downside, in terms of complexity of coordinating an increasing number of stakeholders, and achieving the most effective synchronization of a series of interventions and investments in transport infrastructure and logistics services with economic investments in productive industries and activities.

Corridors are not only complex, as measured by their reach and scope or the large variety of the stakeholders involved, they also evolve over time. There are two main life cycles for a development corridor, which may alternate and sometimes overlap: (i) the development cycle, characterized by a concentration of investment in economic or transport infrastructure, and (ii) the operational efficiency cycle, characterized by a focus on solving and fixing logistics bottlenecks. For each of the two cycles, the focus, the stakeholders and the types of challenges faced vary and therefore require different approaches.

The first chapter elaborates on the comprehensive notion of a corridor—the development corridor, particularly under the form theorized in Southern Africa, the Spatial Development Initiative—a prominent example being the Maputo Corridor.

Reviving the Maputo Corridor required a combination of reforms and investments in the transport system to restore it as a credible route for regional trade. The Maputo Corridor was in the past a major trade route for some South African overseas trade, but after years of unrest in Mozambique, volumes declined as trade shifted to other routes. The transport infrastructure also deteriorated into a poor state of repair. Once peace was restored, the challenge was therefore not only to rehabilitate the infrastructure and resume transport services, but also to do so in a context of low volumes. Although transport was a key enabler in restarting the Mozambican economy (on the Maputo Corridor but also on the other corridors), the Government of Mozambique had insufficient resources for the level of expenditure required given the condition of the corridor, and had to turn to the private sector for investing in and managing the transport network. However, the demand that would make private sector investments viable was uncertain.

The Governments of Mozambique and South Africa set out to create an environment to attract private sector investment. They sought to make both the political and the economic context favorable in the two coun-

tries. There was an alignment of interest between a post-apartheid South Africa and a post-civil war Mozambique with a strong economic potential in the hinterland of the port of Maputo. Opportunities for industrial development—major anchor projects in SDI terminology—were identified, investors found and deals successfully closed (notably the two emblematic investments for the MOZAL Aluminum smelter and the development of the Pande and Temane gas fields in Mozambique). On a regional level, there was also a consensus on the role of private sector in transport infrastructure financing and operation.

However, despite those favorable conditions, execution was not always smooth though overall outcome was positive. Several concessioning models were used for the different transport corridor components, with varying degrees of success. For road infrastructure, the N4 toll road concession enabled the rehabilitation of the highway between Maputo and the Gauteng Province of South Africa, which led to the rapid growth of vehicle traffic (for all sizes of vehicles, personal and heavy goods). For the rail, the concession attempt failed, but a strategic partnership between the port authority and the national railways in Mozambique was forged to support capacity development to respond to increasing demand. For the port concession, the initial uncertainties triggered a restructuring of the shareholding though the partnership is now stable and major capacity development plans are being pursued. The rehabilitation of the facilities at the border post was critical for facilitating cross-border trade, but the process to convert the border post to 24/7 one-stop operation has faced difficulties and delays, although there was progress on automation.

The second chapter reviews the challenges of private sector participation in the corridor transport systems and the associated policy reforms that, combined, are necessary to improve corridor efficiency.

The challenge for managing the development of a corridor is to adopt an adaptable and flexible institutional framework that takes into ac-

count the life cycle of that corridor to ensure effective coordination of all relevant stakeholders. Coordinating and managing investments or improving corridor logistics are activities that differ in nature. They require the involvement of a different set of stakeholders and follow a different process to achieve a different set of objectives.

The Maputo Corridor started with the development cycle, and when most of the infrastructure restoration and modernization was completed, focus shifted to operational efficiency, before entering a new consolidation phase combining the two cycles. However, the transition was not a planned and managed process, and at some point, there was an institutional vacuum in terms of a mechanism to lead from the development cycle to the operational one. Rather, a private-sector initiative assumed the lead for that cycle, and its main actors are now planning and managing a second development cycle for the corridor.

The third chapter discusses the institutional framework that supports corridors, drawing lessons from the manner in which the challenges of matching the form of the corridor secretariat to the objectives that have been addressed on the Maputo Corridor.

It can be concluded from the review of the Maputo Corridor that success requires flexibility, committed partners and dialogue, on top of a prior favorable ground (on the political and economic fronts). It is necessary to develop an efficient corridor secretariat to sustain the process, but with variable geometry to adapt its configuration to the corridor cycles. Involving the private sector is indeed important, but involving the correct partner is paramount. Finally, the alignment of strategies of the corridor countries—a pre-requisite for launching a corridor, must be maintained throughout the life of the corridor.

An efficient corridor secretariat needs to engage all relevant stakeholders, cognizant of the fact that the set of relevant stakeholders changes with the life cycle of the corridor. During the development cycle, the

functions to be performed by the secretariat are similar in nature to FDI (foreign direct investment) promotion, with mainly public and financial institutions as the main relevant stakeholders. During the operational efficiency cycle, the focus is on correctly diagnosing bottlenecks and fixing the problems, with mainly users and logistics service providers. On the Maputo Corridor, the MCLI (Maputo Corridor Logistics Initiative) has emerged as a successful corridor management institution, which maintains a high level of stakeholder engagement, with a broad membership that enables it to perform its role for the two dominant cycles. However, its sustainability is not yet achieved, as establishing an appropriate mix of technical expertise required, mandate, and resources need to be addressed. It is in this regard that the Maputo Corridor could also learn from the experience of other corridors to find out how to best ensure the sustainability of the corridor secretariat.

There is no one-size-fit-all model for successful private sector participation. Several models coexist on the Maputo Corridor, with successes and failures in all models: the common BOT (Build-Operate-Transfer) approach used for the N4 highway worked for the corridor but there is an uneven history of BOT concessions elsewhere in Africa; another type of concession, the joint-venture between the concessionaire and strategic partners worked well for the port of Maputo, but not for the railway line between Mozambique and South Africa. The industrial investments in the economic anchors are more straightforward. Suffice to say finding the right partner—a strategic partner with a long-term commitment to developing the corridor as it fits its regional strategies—seems to be the key and at any rate more important than the form of involvement or the concession model used. On the Maputo Corridor, the right partners were TRAC for the N4 concession, Grindrod and DP World for the port of Maputo, and parastatal companies for the railway.

Ensuring alignment of regional and national strategies right from the beginning is important, but it is also essential to maintain that alignment over time. National, regional and political strategies evolve and

may take divergent routes over time. In addition, the changing regional context outside of the strict geographic scope of the corridor may still affect its development or influence its strategies (for instance, the competing or emerging corridors, the incidence of the REC master plans or regional instruments, and the spatial national strategies). An essential role of the corridor secretariat is to be the forum that ensures regional dialogue between countries, provinces and corridor users, is maintained and regional commitments adhered to.

1. Corridors and economic development

The notion of corridor has evolved over time, expanding its scope to include a wider economic and development perspective. Initially, corridors were largely seen as pure transport routes. This narrow notion evolved with the realization that logistics services, and the institutional and regulatory framework that governed service were equally important. Finally, the Spatial Development Initiative (SDI) developed by South Africa after the end of the apartheid (similar to development corridor concept used elsewhere) further expanded that notion to include the demand side through investments in unrealized economic potential. It advocates for a holistic approach, comprised of several sectors typically transport and one of the productive industries such as mining or agriculture. However, the approach has also its downside, in terms of complexity of coordinating an increasing number of stakeholders, and achieving the most effective synchronization of a series of interventions and investments in transport infrastructure and logistics services with economic investments in productive industries and activities.

Corridors are not only complex as measured by their reach and scope, or the large variety of the stakeholders involved, they also evolve over time. There are two main life cycles for a development corridor, which may alternate and sometimes overlap: (i) the development cycle, characterized by a concentration of investment in economic or transport infrastructure, and (ii) the operational efficiency cycle, characterized by a focus on solving and fixing logistics bottlenecks. For each of the two cycles, the focus, the stakeholders and the types of challenges faced vary and therefore require different approaches.

Corridors and spatial development initiatives

Given its geography and a long history of inefficient transport systems, nowhere have logistical and transport bottlenecks been more evident and taxing than in Sub-Saharan Africa (SSA). The vast masses of land that need to be linked to integrate markets and decades of inefficient

investments in transport infrastructure have compromised SSA's ability to respond to the opportunities brought by globalization, placing limits on the region's capacity to benefit from trade¹.

Tackling the challenges and weaknesses call for a shift towards more comprehensive transport policies that are integrated into the broader economic and political context, with a view to simultaneously addressing the many dimensions of transport and logistics that can hinder local, regional and international trade.

The economic function of a corridor, or transit corridor in the case of landlocked countries, is to promote both domestic and international trade by providing efficient transport and logistics. The novelty of the corridor approach relative to traditional transport policies lies in the adoption of a more trade-oriented approach, which includes not only investments in hard infrastructure, but also targeted interventions in the soft dimension of the transport corridor—policy reforms and other adjustments. These interventions have to be driven by a clear sense of the requirement to serve the multi-faceted needs of a broader hinterland, beyond the direct catchment area of the transport infrastructure, in order to trigger sustainable economic integration and growth.

In Southern Africa, there was a deliberate attempt to utilize this new model, which was translated by the Government of South Africa into

¹ In 2014, shipping a container from a firm located in the main city of the average country in Sub-Saharan Africa was almost twice as expensive as shipping it from a developed economy (OECD high income), according to Doing Business, 2014. Not only was transport to and from SSA more expensive, it was also more time-consuming: it took 31 days on average for a firm to get a standard 20 feet container from its warehouse through the closest port and on a ship. This was almost three times longer than in developed economies.

what were termed spatial development initiatives² (SDI). SDIs have the following core dimensions:

- i. *Transport infrastructure* (primary and feeder roads, rail network, border facilities and port infrastructure)
- ii. *Freight logistics* (including transport and logistics service providers at corridor nodes and platforms, and transport services along the corridor routes)
- iii. *Institutionalized frameworks and procedures* (including procedures and regulations that affect the competitiveness of transport and logistics services)
- iv. *Anchor projects* in agri-business, industry, tourism and other sectors with high demand for transport and logistics services, which can unlock the economic potential of the targeted regions and trigger important economic multiplier effects

The rationale of the SDI program³ is that unrealized economic potential can be unlocked by facilitating private sector investment, which first requires removing bottlenecks preventing investments—transport often being a critical component of the program—and second, identifying strategic investment opportunities, anchor projects, that can trigger additional upstream or downstream development.

² This terminology may vary across contexts where SDI sometimes is referred to as transport corridors or growth poles.

³ *Spatial Development Initiatives (SDIs) – the official view* by Jourdan P., 1998.

Figure 1. Expanding scope of the corridor approach

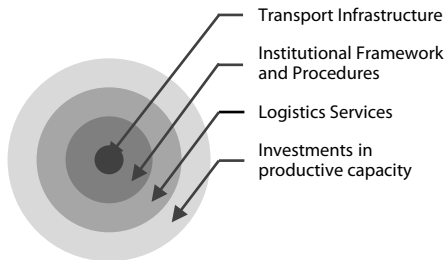


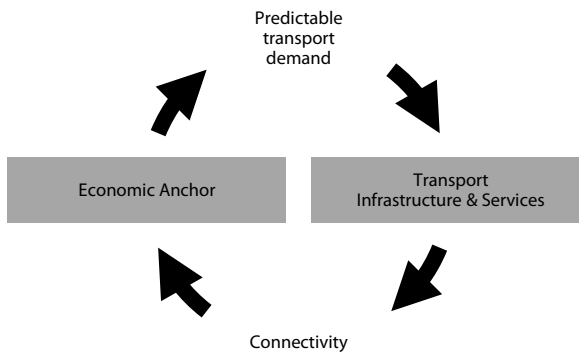
Figure 2. Simplified SDI methodology (adapted from Paul Jourdan)



The formulation of the SDI strategy by the South African government in the mid-90s had relevance for the whole of Southern Africa, and in 2000, a regional SDI unit that had been housed in the South African Department of Trade and Industry was moved to the Development Bank of Southern Africa (DBSA), which though South African government supported, has a regional development mandate. The Maputo Development Corridor was adopted as the model for other regional corridors. The initial group of countries covered by the Regional SDI Program (RSDIP) was comprised of Mozambique, South Africa and Swaziland. The Program was later expanded to include Botswana, Malawi, Namibia, Zambia and Zimbabwe. Subsequently Angola, Democratic Republic of the Congo, Rwanda and Tanzania were included one after the other. Eventually, the concept was extended to the African continent under the Spatial Development Program of the New Partnership for Africa's Development (NEPAD), and finally included in the Program for Infrastructure Development in Africa (PIDA).

Unlocking economic potential requires connecting to a market, and typically requires transport infrastructure and services along a corridor. Infrastructure and services will often include land transport such as roads, railways, pipelines, as well as port facilities. Connectivity is often maximized when different elements are in place, and is a critical prerequisite for making large investments financially viable. There is therefore a real challenge of coordinating several investments in economic anchors and transport systems.

Figure 3: Dependence between economic and transport investments



The set of active stakeholders in an SDI differs from the traditional approach as it includes not only public infrastructure development and regulatory agencies for transport and logistics but also the private sector – increasingly a provider, operator and consumer of transport and logistics services, as well as local governments and authorities in charge of planning local and regional development. While this model can significantly raise coordination costs in the development of the corridor by increasing the number of stakeholders, it holds two key advantages: it can lock-in demand for the corridor by actively engaging the private sector from the outset, while in principle it also helps secure public support (and accountability) to ensure smooth policy implementation by both central and local administrative authorities.

The SDI approach is designed to maximize the regional impact of transport corridors development and management. First, it can be an important catalyst of regional economic integration, as many of SDIs do not follow national or administrative borders. This is particularly relevant for landlocked countries that are heavily reliant on neighboring transport networks to access international trade routes. Second, a more comprehensive focus on the corridor as a vehicle of trade facilitation helps to strike a balance on the complementarity between the hard and soft dimensions early on in the process of designing transport policies. Third, the removal of regulatory constraints to trade will more often than not require extensive political cooperation between regional and central governments. The SDI approach can incorporate the required mechanisms to facilitate this type of economic and political exchange from the start. Lastly, SDIs identify and attempt to align common economic interests not only across regions and countries, but also across public and private entities. By creating institutionalized platforms for discussion and exchange, and by helping shape a clear agenda for growth, it can yield more strategic, forward-looking and effective solutions to the challenge of reducing trade costs and increasing regional competitiveness.

The impact of a corridor depends on the objectives of the different stakeholders—corridor users, public regulatory or control institutions—and also its history, whether it is greenfield or a historical trade route. It would depend also on the expected outcomes—increased connectivity beyond the corridor confines, logistics efficiency or wider regional economic impact. The optimal institutional setup that supports SDIs may vary significantly according to these objectives. In some cases, they will target historically developed corridors, which due to shifts in economic and political circumstances may have fallen in disuse, requiring significant investments to revitalize existing economic activity. In others, they can represent a developmental, greenfield project aimed at generating new productive capacity in a previously undeveloped area. The organizational and institutional requirements of each of these

models, the sequencing of investments as well as the overall economic impact of the initiative, are likely to differ substantially. While greenfield or development corridors have the possibility of allowing more organizational innovation, unhindered by existing institutional setups, historical corridors have to mitigate existing organizational dysfunctions, overcome the problem of overlapping jurisdictions, and aggregate ongoing development plans that may not have been originally designed to maximize synergies between projects. They may also face greater challenges in overcoming deep-rooted organizational sclerosis among existing institutional frameworks governing transport networks. Greenfield corridors face greater uncertainty in demand (by definition), and given the significant complementarity between transport and economic investments may struggle to obtain the right sequence that can trigger economic growth—transport is only viable if there is business, and different types of business require different types of transport modes and services. These corridors may in fact fall short of reaching the critical mass of economic activity that makes further transport investments viable. Transport intensive anchor projects with significant backward and forward linkages in the economy are therefore critical (though not always sufficient) for developmental corridors to succeed. Historical corridors on the other hand may more easily respond to the requirements of existing demand for transport, initiating a virtuous cycle of economic activity.

Development corridors and historical corridors are not different types of corridors, they are just corridors seen at different stages of their life cycle: greenfield corridors start with the development cycle, characterized by a concentration of investment in economic or transport projects, while historical corridors are more often in the operational efficiency cycle, characterized by a focus on logistics bottlenecks. Once its transport and economic foundation is established, the corridor enters into the operational efficiency cycle. The two cycles alternate, but their sequencing is not fixed—development and operational efficiency cycles can appear or repeat themselves in different order, or even coexist.

Table 1. Development and operational cycles

	<i>Development cycle</i>	<i>Operational cycle</i>
Objective	Promote private sector investment in transport and economic anchor projects	Remove obstacles to trade to enhance corridor efficiency
Focus	Investment projects focus	Problem / issues focus
Stakeholders	Line ministries for trade, industry, transport and finance Investment promotion agencies Local governments and authorities Financial institutions	Transport and trade public regulatory and control agencies Logistic operators Transport network and facilities operators Shippers
Challenges	Establish an adequate political and legal framework	Knowing what is wrong and why, then lobby to fix what needs to be fixed

The Maputo Corridor has concluded its initial cycle of development in 2008, with the rehabilitation of its main railway, the main road network in 2004 and the port between 2004 and 2008. It then shifted to a challenge-solving cycle, essential to enable a further phase of development with an ambitious program of investments, which will see its capacity double over the next decade.

The Maputo Corridor SDI

The Maputo Development Corridor was the first regional SDI, and as such was often viewed as the flagship of the RSDIP, but its relevance as corridor from which lessons can be learnt goes beyond that character of pioneer. The Maputo Corridor has several distinguishing characteristics. It can be described as

- a historical corridor that lost its traffic, but its revival was based on economic anchor projects, and therefore has to a large extent a development flavor

- a mining corridor, its traffic base being dominated by export flows of minerals and ores, but not entirely as industrial process of imported ores is also taking place (MOZAL imports alumina and coal for its aluminum production)
- a transit corridor, as it connects landlocked countries (Swaziland, Zimbabwe) to the sea, but not only, as South Africa has several major ports competing on the same regional hinterland. Moreover, South Africa trade routed through Maputo imposes a transit regime, whereas direct trade through South Africa ports do not require one, a rare situation in Africa⁴

Table 2. Corridor typology

	<i>Maputo fitting with profile ...</i>	<i>... but not entirely</i>
Historical corridor	Was the largest route for South Africa overseas trade prior to Mozambique Independence	Major part of activity is linked to new traffic streams
Transit corridor	Landlocked Zimbabwe and Swaziland rely on the corridor for access to sea	South Africa has direct options through its domestic ports
Mining and ore-based industries corridor	Large volumes of mineral exports (coal, magnetite, etc.)	Diversified traffic (for instance exports of sugar and fruits) and mineral imports
Development corridor	Large economic anchor projects	

That combination of features is partly unique in Sub-Saharan Africa, where corridors tend to serve one main purpose. The multiple func-

⁴ The only other example in Sub-Saharan Africa would be the Kinshasa area in the Democratic Republic of the Congo, which has an alternative route to the sea through the port of Pointe-Noire in Congo, in addition to its domestic port of Matadi (the other parts of the Democratic Republic of the Congo use ports in Eastern and Southern Africa, but they are out of range of Matadi).

tions of the Maputo Corridor therefore, provide an ideal learning opportunity with potentially valuable lessons in a wide variety of contexts.

In recent years, some of the most well-developed and far-reaching SDIs have emerged around historical corridors in Southern Africa, focusing political attention at the international, provincial and local level on the need to fast-track critical investments in infrastructure and logistics that catered to well-defined anchor projects. Despite sharing similar goals, economic, political and geographic constraints delivered a remarkable degree of organizational and institutional heterogeneity across these corridors. Meanwhile, several historical corridors, such as the Mombasa Northern Corridor, are shifting their focus from a pure transit and operational perspective to a more developmental one. The timing is therefore right to take stock of what has been accomplished through the Maputo Corridor and to identify what still remains to be done. The goal is to create a knowledge base for corridor development that can help assess the Maputo Corridor experience, while guiding others and SDIs through their development.

2. The Maputo Corridor

Reviving the Maputo Corridor required a combination of reforms and investments in the transport system to restore it as a credible route for regional trade. The Maputo Corridor was in the past a major trade route for some South African overseas trade, but after years of unrest in Mozambique, volumes declined as trade shifted to other routes. The transport infrastructure also deteriorated into a poor state of repair. Once peace was restored, the challenge was therefore not only to rehabilitate the infrastructure and resume transport services, but also to do so in a context of low volumes. Although transport was a key enabler in restarting the Mozambican economy (on the Maputo Corridor but also on the other corridors), the Government of Mozambique had insufficient resources for the level of expenditure required given the condition of the corridor, and had to turn to the private sector for investing in and managing the transport network. However, the demand that would make private sector investments viable was uncertain.

The Governments of Mozambique and South Africa set out to create an environment to attract private sector investment. They sought to make both the political and the economic context favorable in the two countries. There was an alignment of interest between a post-apartheid South Africa and a post-civil war Mozambique with a strong economic potential in the hinterland of the port of Maputo. Opportunities for industrial development—major anchor projects in SDI terminology—were identified, investors found and deals successfully closed (notably the two emblematic investments for the MOZAL Aluminum smelter and the development of the Pande and Temane gas fields in Mozambique). On a regional level, there was also a consensus on the role of private sector in transport infrastructure financing and operation.

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transport corridor components, with varying degrees of success. For road infrastructure, the N4 toll road concession enabled the rehabilitation of the highway between Maputo and the Gauteng Province of South Africa, which led to the rapid growth of vehicle traffic (for all sizes of vehicles, personal and heavy goods). For the rail, the concession attempt failed, but a strategic partnership between the port authority and the national railways in Mozambique was forged to support capacity development to respond to increasing demand. For the port concession, the initial uncertainties triggered a restructuring of the shareholding though the partnership is now stable and major capacity development plans are being pursued. The rehabilitation of the facilities at the border post was critical for facilitating cross-border trade, but the process to convert the border post to 24/7 one-stop operation has faced difficulties and delays, although there was progress on automation.

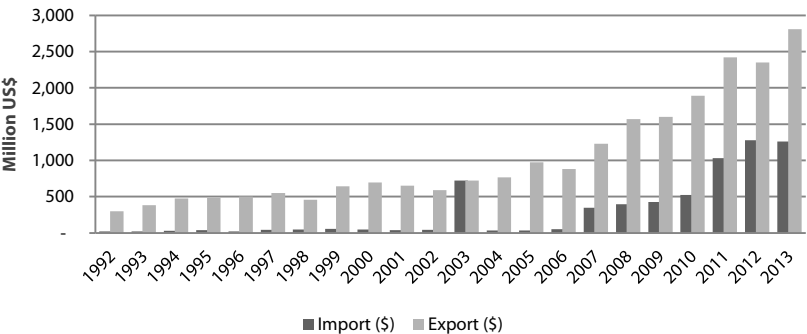
Historical and geographic background

Before 1975, the Maputo Corridor was an integral part of the Southern African transport network, and a prime route for South African provinces in the Eastern Transvaal to access the sea. In its heyday, some 40% of South African industrial exports were transported along that route and exported through the Port of Maputo, which lies 92 km away from the South African border. Given its long coastline, the origins of the Mozambican transport system can be traced to the colonial imperative of providing the fastest path for the South African and Zimbabwean hinterland to the sea. In the early 20th century, 40% of the Mozambican national budget relied on the cross-border and east west oriented transport corridors.

For several decades, the production areas of citrus, timber and sugar in landlocked Swaziland also relied on the Maputo Corridor as its primary export corridor. At the time, the Port of Maputo handled about 14 million tons of cargo per year, the majority being transported by rail. Following Mozambique's independence and the outbreak of civil war in 1978, cargo levels at the port dropped dramatically to around 1 million tons per year, and the railway lines leading to Maputo were severely damaged. South African exports and those of other landlocked coun-

Today, the corridor serves one of the most highly industrialized and productive regions of Southern Africa, including the Gauteng province of South Africa – the services, industrial and financial hub, with a large concentration of manufacturing, processing, mining and smelting industries, the Mpumalanga province with a diversified economy in manufacturing, mining, tourism, chemicals, agriculture and forestry, the Limpopo province with the vast magnetite deposits of Phalaborwa, and Swaziland with its exports of sugar, citrus, forest products and import of cereals. In Mozambique, the corridor crosses industrial and primary production areas containing steel mills, petro-chemicals, quarries, mines, smelters, forests, sugar cane, bananas and citrus.

Figure 5. Bilateral trade South Africa-Mozambique



Source: South Africa DTI

Opening up the corridor for trade had not only a positive impact on the transit trade flows (translating mainly in railways and port levels of activities), but also on regional trade, notably between South Africa and Mozambique. The dominant trade flow is from South Africa to Mozambique, and consumers in Maputo can now find everything that used to be available only in South Africa. However, exports from

Mozambique, which were negligible⁵, have picked up, and average now half of the value of imports.

Box 1: Economic anchor projects on the Maputo Corridor

Anchor projects have been critical in providing the economic rationale for the upgrade of the Maputo Corridor. Two of them have been particularly emblematic: the MOZAL Aluminum smelter, and the Pande / Temane gas fields and South Africa pipeline. In addition to the linkages with transport, there was a high degree of connection between the anchor projects. For instance, the MOZAL smelter inputs are alumina and coal, imported through the port, and electricity, imported from South Africa, the smelter being a major tenant of the Beluluane Park. The provision of electricity from South Africa is part of a larger agreement between the two countries on energy, where SASOL was granted the rights to exploit gas in Pande and Temane field (piped to South Africa where it was used for generating electricity) and high voltage lines were built between Duhva and Maputo.

The Pande / Temane gas fields

The starting point was the signature in May 2002 of an agreement between both Governments of Mozambique and South Africa and SASOL for the exploitation for a period of 30 years of gas fields around 600 km north of Maputo, and the construction of a 865 km long gas pipeline to South Africa to the installations of SASOL in Secunda. A joint venture was formed for the project, with 70% SASOL Petroleum Temane, 25% CHM (Companhia de Hidrocarbonetos de Moçambique) and 5% IFC. The commercial production started in February 2004 in Pande and in 2010 in Temane. The investment was around \$1 billion.

Mozal aluminum smelter

MOZAL is an aluminum smelter (with BHP Billiton 47%, Mitsubishi 25%, IDC 24% and the Government of Mozambique 4%) installed at the port of Maputo representing an investment of \$1.1 billion. Raw material (Alumina and coal, around 1.2 million tons) is imported through Matola terminal, electricity is coming from South Africa, and final aluminum ingots are exported (currently 500,000 tons). Phase 1 with a production capacity of 250,000 of aluminum was opened in September 2000, and phase 2 for equivalent capacity in May 2003, making MOZAL one of the largest smelting facilities in the world. A mega project like MOZAL sent a strong signal to potential FDI interests, as it demonstrated that large-scale investments could be successful in a country like Mozambique.

⁵ The value of the imports in 2003 appear to be an observation error.

The first stage in the development of the corridor focused on the need to identify a cost-effective strategy to rehabilitate its core infrastructure and to maximize the multiplier effects of investments in the broader economy by linking transport infrastructure to the demands of anchor projects in agri-business and mining. The anchor projects underpinning the Maputo SDI included the mega-projects of MOZAL (an aluminum smelter), the Beluluane Industrial Park, the natural gas from Pande and Temane and a petrochemical cluster with abundant upstream and downstream opportunities for industrial development. Projects were transport-intensive, rendering the rehabilitation of the corridor a necessary pre-condition for these investments to take place.

Infrastructure and soft dimension of the corridor

The civil wars that took place in the 70s and 80s brought some of the regional corridors to a standstill, crippling the country's integration into the regional transport network. Following years of neglect during the civil war, the Mozambican transport network was characterized by impassable roads, poorly run ports and inefficient and costly rail networks. The poor state of the Mozambican transport infrastructure was a prime contributor to high transport costs, which were then passed on as high transport prices to users.⁶ The high cost of cargo movements and delays associated with the inefficiency of the transport system forced producers, dealers and distributors to keep excessively high inventory levels in order to respond to market demand fluctuations, driving many out of export and import markets.

⁶ In Mozambique, transport charges for producers of a staple good like maize were estimated to ascend to about 60% of farmgate producer prices in 2001 (Ministerio da Industria e Comercio, 2001).

Table 3: Timeline of the Maputo Corridor

<i>Political & Institutional</i>	<i>Agreements & Commitments</i>	<i>Economic landmarks</i>
Years 1990s		
August 1992 Peace Agreement in Mozambique	March 1996 Concession of the Maputo Container Terminal	March 1998 Construction started on N4
April 1994 Democratic elections in South Africa	May 1997 Concession N4 signed	
August 1995 South Africa-Mozambique Agreement to revive trade		
May 1996 Launch of the MDC Investors Conference		
July 1996 SADC Protocol on Transport Communication and Meteorology		
Years 2000s		
March 2004 Creation of MCLI	January 2002 MoU for Rail Concession signed	March 2000 Matola port opened
April 2005 Visa for South Africa and Mozambique abolished	May 2002 Agreement South Africa Mozambique on Pande Temane gas fields	September 2000 MOZAL 1 opened May 2003: MOZAL 2 opened
September 2007 MoU between South Africa Mozambique on one-stop border post at Lebombo/Ressano Garcia	April 2003 MPDC started to manage the port of Maputo	February 2004 SASOL pipeline completed
	February 2007 CFM – Spoornet agreement on RGR	July 2008 Rehabilitation of RGR completed
Years 2010s		
October 2012 Mozambique Customs Law adopted	April 2012 Transnet Freight Rail launched MDS	July 2010 Opening of freight by-pass at border post
	August 2012 Agreement SR MPDC CFM TFR on rail services	

The end of the civil war in the early 1990s increased awareness of the importance of transport in reviving an economy battered by decades of conflict. At the same time, what was to become a decade-long privatization process gave birth to a new entrepreneurial class demanding a viable transport system as the foundation of any process of growth.

While business would pressure for investments in a north-south connection that would integrate the domestic market for the free movement of labor and goods, scarce resources and the poor state of infrastructure in the aftermath of two decades of war significantly constrained the range of feasible reforms available. Given the high capital requirements to repair and rebuild the transport infrastructure of the country, the Government of Mozambique could not undertake it with its own resources, and it soon became clear that the only way forward would require concessional lending and private sector involvement in improving road, rail and port services. Turning to the private investors was not only essential to revive the corridor; it was also echoing the regional policy promoting involvement of the private sector in the provision and management of transport infrastructure and services.

Under the SDI approach, railways, ports and roads represent critical inputs for all other private sector investments in the region. This key transportation infrastructure quickly became the central axis of corridor development: the EN4/N4 concessioned toll highway, the Ressano Garcia railway, the Lebombo-Ressano Garcia border post and the Port of Maputo. The following sections discuss the importance of investments in each of these components, and how in all instances, returns to investments in the hard infrastructure were compromised by constraints in the associated soft dimension.

Road transport

The reconstruction of the N4/EN4 highway between South Africa and Mozambique was an early priority as the key infrastructural component

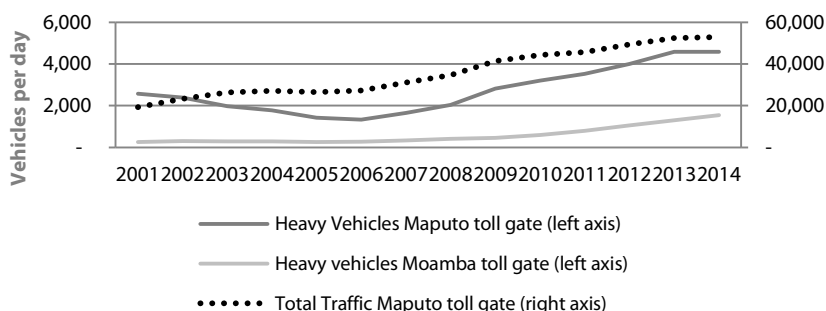
to open the Maputo Corridor to business. Beyond being a critical transport link between Gauteng and Maputo, it represented a potential catalyst for new economic development opportunities in Northeastern South Africa and Southern Mozambique, particularly in agri-business and tourism.

In 1997, a Build-Operate-Transfer (BOT) Concession Agreement was signed by the Governments of South Africa and Mozambique (represented by their respective national roads agencies, SANRAL and ANE) with Trans African Concessions (TRAC), a private sector consortium, to finance, design, construct, rehabilitate, operate, maintain and secure the future expansion of the highway, for a 30-year concession period. The concession of the toll road was awarded under the South African PPP framework, with the winning consortium investing over \$400 million in 2002, and committing to spend a similar amount of maintenance for the duration of the 30-year BOT concession. Funding for this concession came from equity investments by four of the major South African banks together with the Development Bank of Southern Africa. Given the limited exposure of Mozambique to the toll road system and the inherent risk associated with a concession, these investments were jointly guaranteed by both countries and a complex scheme of cross-subsidization from South African to Mozambican user fees.

Actual construction work on the N4 started in March 1998. The first toll plaza, Middelburg, opened in December of the same year, and two more tolls were opened the following year. The two to four-lane toll road was completed in 2004. Initially, the project involved the upgrading and rehabilitation of 390 km of existing road between Balmoral (20 km west of Witbank) and Moamba (proximity of the South Africa-Mozambique border) with a further 50 km long road between Moamba and Maputo. The concession was extended in 2004 to include the N4 road sections between Witbank and Pretoria, a total of 630 km. TRAC obtains revenue through six toll plazas, four in South Africa, and two in Mozambique, plus several on access ramps.

Since 2006, there has been a significant increase in traffic on the EN4/N4. The average daily traffic illustrated below show the evolution at the Maputo toll gate for all types of vehicles, and for heavy vehicles at the Moamba and Maputo toll gates. It shows that the majority of traffic volumes still correspond to passenger vehicles. This suggests that the development of road infrastructure has stimulated primarily tourism and labor mobility.

Figure 6. Vehicle traffic on the N4 - Annual average daily traffic



Source: TRAC

Despite a steady traffic growth, the sustainability of the PPP arrangement underpinning the concession has been challenged by the lack of responsiveness of the Mozambican authorities to clear land slated for future expansions of the highway, adjust user fees to account for inflation and by poor monitoring of overloaded trucks, which can cause a rapid deterioration of the road and a significantly increase of maintenance costs. The concession agreement did not include regulation for overload control. A survey conducted in 2000 indicated that over 32% of vehicles were overloaded. To protect the infrastructure, TRAC entered into an agreement with SANRAL in 2002 and equipped traffic control centers (seven in South Africa and two in Mozambique) to enable law enforcement officer to perform their role. In 2007, satellite

tracking technology was added to the system. Since the beginning of the axle load control, overloading has reduced to 9%.

Rail

The Ressano Garcia Railway (RGR) runs for 89 km between Maputo and the South African border, where it interconnects to the South African system linking to Gauteng and beyond. The network is interconnected with that of South Africa, Zimbabwe and Swaziland, and represents a key component of the Maputo corridor transport system.

Table 4: Rail distances from Maputo

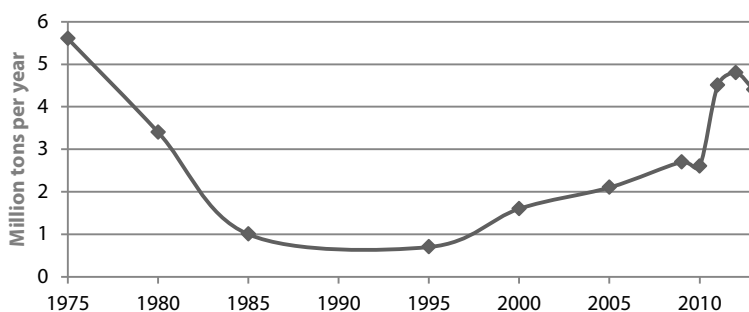
<i>Border</i>	<i>Johannesburg</i>	<i>Pretoria</i>	<i>Phalaborwa</i>	<i>Manzini</i>
89 km	581 km	574 km	374 km	228 km

The construction of the first railway line between Maputo (then Lourenço Marques) and Gauteng dates back to 1891 and 1894 for passenger and rail freight transport, respectively. The Mozambique Convention, established in 1928 between South Africa and Portugal, entailed providing Mozambican labor to South Africa—to work mostly in the mining sector—in exchange for a guaranteed volume of South African cargo to move through the Port of Maputo. Prior to 1974, most of the freight transport along the Maputo Corridor was rail based. In the aftermath of the colonial independence war in 1975, the Mozambique Convention became obsolete, resulting in a drastic reduction in rolling stock assigned to rail services on the corridor. The rail infrastructure, particularly on the Mozambican side, further deteriorated as a result of the civil war.

In 1995, the Ministers of Transport from South Africa and Mozambique agreed to the re-establishment of the rail link between the two countries. Due to the dependence on South Africa, the Mozambican

government decided that the concession for the railway line would be negotiated. As a result, a consortium was formed by Spoornet (now Transnet Freight Rail, the South African transport parastatal) and New Limpopo Bridge Projects Investments (NLPI), the Ressano Garcia Railway Company, named the preferred bidder in 1998. The intent was to grant a 15-year concession to finance, rehabilitate, operate and maintain the railway with the goal of developing a complete service from South Africa to the Port of Maputo. The closing of the concession agreement dragged until December 2002, when it was finally signed with a consortium comprising NLPI / Spoornet (51%) and CFM (49%).

Figure 7. Ressano Garcia railways traffic



Source: CFM

In December 2005, the concession agreement with RGR was cancelled by the Mozambican authorities due to fundamental disagreements between partners; NLPI experienced several delays due to the demining of the route for the rehabilitated line (the land mine clearance certificate was only received in May 2004), Transnet appeared to shift the focus of its activities to domestic corridors linking its centers of production and consumption to domestic ports, and the Government of Mozambique was growing weary of private sector involvement as several PPP contracts were struggling to produce results in other transport corridors in the country. As a result, rail traffic through Ressano Garcia remained

somewhat static, most of its cargo being diverted to road or to alternative transport corridors, whereas the project had estimated a traffic increase from 2.9 million tons to 6.8 million tons per year over the 15-year concession period.

In 2006, following a meeting of the Heads of State of Mozambique and South Africa, the parastatal companies CFM and Spoornet (now Transnet Freight Rail) were mandated to develop a strategy for the rehabilitation of the Ressano Garcia railway line. CFM assumed responsibility for the rehabilitation and operation of the line from Ressano Garcia to Maputo, and Transnet Freight Rail agreed to provide rolling stock and to re-direct higher trade volumes to Maputo. This agreement led to the rehabilitation of the 89 km railway line in 2008 at a cost of \$20 million in infrastructure and \$50 million in rolling stock.

The railway line is facing two main contradicting challenges: in simplistic terms, insufficient demand and insufficient capacity. At the completion of the RGR rehabilitation, it still had a surplus annual capacity of 2 million tons of cargo, which represented 25% of its total capacity. The railway line failed to attract shippers beyond its traditional customer base; the subset of companies with access to rail have simply increased their demand for it, as opposed to a scenario in which more companies would switch from road to rail transport. The percentage of firms relying on rail in both South Africa and Mozambique remained persistently low between 2006 and 2010⁷. The higher cargo volumes transported by

⁷ A recent study of the impact of investments in the Ressano Garcia railway on business activity further revealed that the Ressano Garcia Railway, in the last four years since its rehabilitation, has had very limited impact on both transport and non-transport intensive firms operating in the region. Based on a random sample of 1,100 surveyed firms operating in both Mozambique and South Africa, the study finds no significant changes in total factor productivity or firm sales following the rehabilitation of the railway (Sequeira, 2013b).

rail appears to be driven primarily by an increase in the intensive margin of demand for rail, rather than its extensive margin.

However, despite the rehabilitation of the Ressano Garcia Railway, CFM and TFR are still far from meeting the needs of rail transport in the region. Limited actual demand for rail services is partly driven by a combination of deficiencies in the rail infrastructure (availability of rolling stock and infrastructure at the port to facilitate rail transport) and deficiencies in the management of rail services, which constrain transport capacity, although the medium to long-term demand for rail transport exists, particularly in the mining industry.

Rail transport is still perceived by users as being unreliable, costly and difficult to access. On the South African side of the railway line, there is very limited transparency in the pricing scheme of rail services, as these are negotiated privately on an ad hoc basis, which prevents smaller firms transporting smaller volumes to obtain competitive rates. Freight forwarders operating in the Maputo Corridor will often suggest that Transnet Freight Rail is significantly increasing prices in this corridor relative to Durban or Cape Town. These claims are difficult to substantiate since Spoornet does not publish an official pricing schedule for its services. The effective rates for rail in Mozambique are also likely to deviate substantially from official rates as they result from intensive negotiations between shippers and CFM. These opaque and non-competitive pricing strategies are likely to have slowed down the extensive margin of demand for rail services as a limited number of firms manage to get information or access to actual slots in the railways.

MCLI has played an important role in highlighting the importance of rail for the transport of large volumes of cargo in the corridor through events disseminating information on the rehabilitation of the line, the lobbying TFR and CFM for increased transparency in pricing and by documenting, even informally, current demand for rail transport.

In April 2012, TFR launched its Market Demand Strategy for a seven-year period, with the aim to increase its market share over road, and its annual traffic from around 200 million tons at the launch to a target of 350 million tons in 2019. The international business unit was established as part of a strategy to facilitate the operation and enable the development of rail corridors. This represents a shift from basic interoperability agreements to full fledged bilateral agreements. On the Maputo Corridor, such an agreement focusing on operational efficiency of the corridor was signed between TFR, CFM, Swaziland Railways and MPDC. A Joint Operation Centre was opened in 2013, which contributed to reduced border crossing and turnaround time in the port, as well as to additional trains running on the line. Investments in infrastructure (new connection between Swaziland and South Africa, additional locomotives and wagons) will enable accommodating the anticipated traffic growth that will see the port of Maputo handle 40 million tons by 2020.

The Port of Maputo

Prior to 1975, the Port of Maputo was considered the largest port in Southern Africa. During the Mozambican civil war and the last decades of an increasingly isolated apartheid regime in South Africa, port activities came close to a standstill, from an annual traffic of 14 million tons prior to independence to 1 million ton during the civil war, slowly re-emerging during the 1990s with an annual traffic below 4 million tons. At the time of its rehabilitation in the early 2000s, the regional transport network had considerably changed. The port of Richards Bay emerged in 1977 to handle primarily large volumes of coal exports, while Durban took over the majority of general cargo handling, becoming the hub port for the region. For South African shippers, neither of these outlets entailed cumbersome border crossings. The challenge therefore was not only to rehabilitate the Maputo Port but also to do so while re-positioning it strategically against a new regional transport landscape.

The first concession in the Port of Maputo was the container terminal, managed by the Mozambique International Port Services (MIPS), a joint venture of Rennies (37%), CFM (33%) and P&O Ports (30%), since March 1996. The negotiations for the concession of the whole port started in 1998, and in September 2000, a 15-year concession to manage and develop the port was granted to an operator formed by MPDC, The Maputo Port Development Company (51%), a Mozambique-registered consortium led by Mersey Docks and Harbour Company (MDHC), and CFM (49%). The consortium includes the Swedish engineering group Skanska and a Portuguese group Liscont. In 2006, Grindrod (a South African shipping and logistics group) purchased the 12.24% share owned by Liscont in the consortium. Grindrod had previously (February 2005) acquired 95% of the Matola Coal Terminal. A year later, Skanska pulled out of the consortium and sold its 12% share to Grindrod. Meanwhile, DP World (a global terminal operator) had acquired in November 2005, the terminal operation portfolio of P&O Ports, which included the Maputo Container Terminal, after Maersk Line took over the liner shipping business of P&O Nedlloyd. DP World further consolidated its presence in Mozambique through the formation of Portus Indico, a consortium formed by Grindrod Limited (48.5%), DP World (48.5%), and Mozambique Gestores SARL (3%, a local consulting group) after the new owners of MDHC decided to withdraw from the consortium in January 2008. The Container Terminal is jointly owned by DP World (60%) and CFM (40%).

The frequent changes in the shareholding of the private operators in the consortiums managing the port or the facilities can be regarded as a reflection of the uncertainties in the global versus local strategies of the port operators. For instance, the increased involvement of Grindrod in the Port of Maputo can be considered as a direct consequence of the port policies in South Africa. At the end of the apartheid, Portnet (the port division of Transnet, as it was named then) engaged in the transformation of the South African ports into landlord port authorities, with a view to invite private sector participation to the management of

the container terminals⁸, with Grindrod then positioning itself to become a major player in the container terminal business in South Africa. However, the policy shifted, and Portnet adopted a more cautious approach to container terminal concessions, limiting private sector participation to a minor terminal in Durban, while modernizing and transforming the container terminals to improve their efficiency. In the absence of clear perspective in the South African scene, Grindrod started to expand its horizon, and Maputo became a logical choice to engage into the regional scene. Similarly, when MDHC was taken over by the Peel Group, a real estate group with a large transport portfolio (ports and airports), the group refocused its interest on British properties, which led ultimately to its withdrawal from Maputo, while the dismantling of the P&O group was triggered by the take-over of its liner shipping division by Maersk Line.

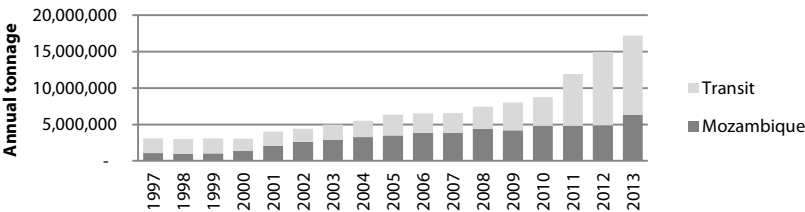
Although the concession agreement was signed in 2000, it did not take effect before 2003. In 2010, the concession, which was due to expire in 2018 (15 years from the effective date of transfer of the operations to MPDC), was extended to 2033, with an option for a further 10 years.

The effective concession of the port marked the beginning of an ambitious investment program that expanded the capacity to accommodate new traffics. For the period 2003-2011, a total of \$291M has been invested by MPDC directly, its shareholders (notably Grindrod for Terminal de Carvão da Matola, TCM) and other port operators for the specialized terminals. For the period 2012-2030, a further investment of \$1.7 billion is planned by all port operators (MPDC and terminal operators) to expand its capacity to over 40 million tons per year, including \$834M for the coal terminal (to increase handling capacity from the current 6 million tons to 30 million tons), \$300M for the container terminal (from 150,000 TEU to 700,000 TEU per year), and \$104M for

⁸ Container terminals in South African ports were directly managed by Portnet, whereas most bulk and specialized terminals were under private management.

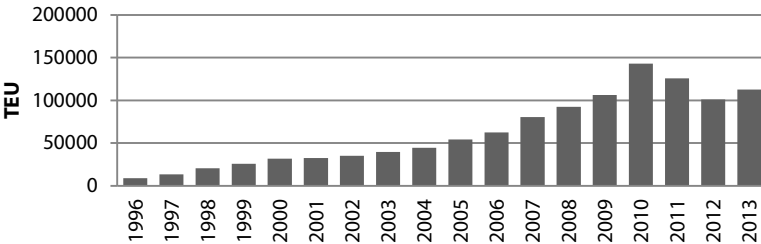
the bulk terminal (to increase capacity from 2 million to 6 million tons per year).

Figure 8: Throughput at the port of Maputo



Source: CFM - MPDC

Figure 9: Container throughput at the port of Maputo



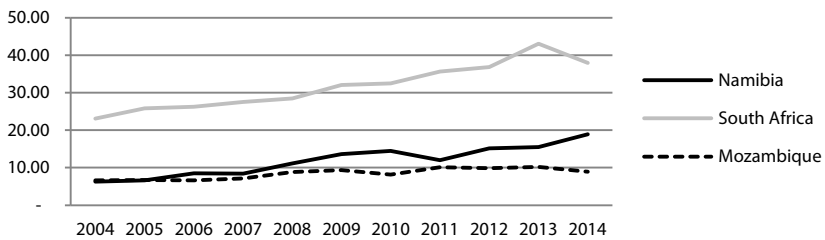
Source: CFM - MPDC

With the apparent solution found for the development of the railway capacity, the future development of the port seems on track. However, despite the planned extension of the container terminal, the port remains predominantly a mining export port with heavy-duty rail transport between the extraction areas and the bulk terminals. Unlike the mining-based traffic, the container throughput peaked in 2010.

Expanding from a successful bulk-based growth to a container market is not an easy transition for a port, and Richards Bay in South Africa experienced similar difficulties, with a container traffic that remains

marginal. The reason is that bulk and containers correspond to two different segments of shipping, tramp for bulk, and liner for containers. With a throughput hovering around 100,000 TEUs per year, Maputo is considered a secondary port, shipping lines prefer to limit their ports of call to the more attractive ports of South Africa, particularly Durban, and organize relay service for the secondary ports from a regional hub. Consequently, shippers deciding to route their containers through Maputo would still end up transshipping in Durban to a main line for the deep-sea leg of the maritime journey.

Figure 10: Liner Shipping Connectivity Index, LSCI



Source: UNCTAD

The UNCTAD LSCI measures the degree to which a country is connected to the international shipping routes. The index has been stagnant in Mozambique, despite traffic growth, whereas its immediate neighbors increased their connectivity: Namibia, which successfully marketed the Walvis Bay Corridor to attract direct shipping line calls, and South Africa. This has yet to materialize for Maputo, and direct services beyond the traditional Indian Ocean boundaries remain rare.

The Mozambique-South Africa border post

The Komatipoort/Ressano Garcia border post is located approximately 90 km from the city and Port of Maputo on the N4/EN4 highway. Today, it is one of the busiest border crossings in Southern Africa, for

trucks, but also for passengers, with traffic peaking at 120,000 persons per day during the busiest holidays.

Performance of the border post improved in recent years, in line with developments in the other components of the transport corridor. The most noteworthy changes have been the creation of new facilities for clearing agents to be physically stationed at the border post⁹, the end of visa requirements for South African and Mozambican nationals in 2006, and the introduction of separate lanes (through freight by-pass) to optimize border traffic flows. Separating flows improved management with differentiated treatment of goods at the border, between transit and final clearance.

With a view to creating a seamless border post and expediting crossing, the Alfândegas de Moçambique (Mozambican Customs) and the South African Revenue Services (SARS) established an initial agreement to develop a single facility for a 24-hour one-stop-border-post by 2010. Though the Mozambican government authorized a 24-hour border as early as May 2005, South African authorities did not immediately reciprocate. In September 2006, border-operating hours for commercial cargo increased to 16 hours a day (from 6 am until 10 pm). Since 2009, the border post has been accepting trade documents for exports until 8 pm and imports until 10 pm, with trucks having until midnight to exit through the border.

Several factors placed this project on hold: the deterioration of the economic climate in 2009, disagreements as to the exact location of the facilities, the high cost of the project and the waning interest of SARS to invest in what is still strategically seen by South African authorities as mainly an export, low-revenue corridor. Moreover, experience of 24-

⁹ Presently, there are approximately 40 clearing agents stationed at Komatipoort (in South Africa) and less than 15 in Ressano Garcia (in Mozambique).

hour operation on other border posts have been inconclusive, notably at the Beitbridge border post between South Africa and Zimbabwe, where traffic continued to peak during regular (day) business hours despite a change to a 24-hour schedule.

However, becoming a 24-hour border post is seen by shippers as critical for the competitive hinterland of the Port of Maputo to stretch as far as the Northwest Province (reaching the Rustenburg mining area, approximately 150 km West of Pretoria) and to attract the fast-moving consumer goods heading in and out of Gauteng, which require fast turnaround times. Frigo, the Mozambique's dry port has relocated to km 4 on the N4 and runs on a 24-hour schedule. With a port and a dry port operating 24 hours, 7 days a week, there is a significant pressure for the border post to follow suit and avoid the buildup of truck traffic overnight at its gates. In any event, Maputo Corridor competes with Durban, which is accessible 24 hours a day to shippers. The actual time required for road transport to complete the loop efficiently ranges between 18 and 22 hours¹⁰.

Overall, increasing the performance of the border post will require complementary investments in hard infrastructure—facilities for parking and storage—and in soft infrastructure like increasing the efficiency of document submission in addition to the extension of working hours of the border post. For now, a phased approach has been adopted, with the creation of a bypass road for commercial cargo to be separated from passenger traffic. Processing of documentation, which was still in paper format and was taking place separately on each side of the border is now improved with the rollout of the electronic single window facility to the Ressano Garcia border post. Changes in legislation to remove

¹⁰ These estimates are based on data obtained from MCLI and interviews to a representative sample of freight forwarders and trucking companies operating in the Maputo Corridor.

transit bonds for some low-risk products and reduce it for others is also considered as a major boost in encouraging South African imports through the port of Maputo. These investments could significantly reduce transaction costs and times, increasing the attractiveness of Maputo Corridor as an import and export corridor for South African cargo. This can result in a more balanced and consequently, cost-effective flow of cargo through the corridor.

An additional constraint faced by Maputo Corridor is the absence of intermodal transport nodes that can enable cargo to be transferred seamlessly across the most efficient transport modes. At present, the key clearance areas are located at the port of Maputo and at the Komatipoort/Ressano Garcia border post. MCLI is participating in the policy debate surrounding intermodality in transport by bringing together providers of road and rail services in discussion fora and by documenting the current needs of its member base.

The political economy of policy reforms

Efforts to revive historical trade routes should account for a long-standing interplay of political and economic forces as well as the broader regional context within which reforms take place. The developments described above – changes in intensity of public-private support, competition between regional public transport providers, as well as its main strengths – involvement of the private sector – reflect broad regional policy consensus in Southern Africa on how to approach the development of trade and transport corridors. The regional approach as contained in the SADC Protocol on Transport, Communications and Meteorology, emphasized public-private partnerships to transport sector development. South Africa and Mozambique were at the forefront of pioneering this new approach on the Maputo Corridor with a high level of cooperation between the two countries.

From the mid-1980s onwards, the South African economic and political system went through several important changes. With the demise of the apartheid system, the country embarked in a bold initiative to diversify the economy's industrial and export base. The premium was now shifting from an exclusive focus on the mining sector toward value-added manufactures and services. This paved the way for an emerging entrepreneurial class to become increasingly vocal in its request for more efficient transport infrastructure to handle general cargo, reducing both shipping times and costs. It became clear that the country's transport infrastructure was ill-equipped to answer the economic needs of this new model of growth¹¹.

As a result, South African business became more actively interested in identifying alternatives to Durban, which had become increasingly congested -with berth occupancy rates at saturation levels and users experienced severe delays due to vessels queuing outside the port and to repeated strikes by a highly unionized labor force. In this setting, the Maputo port, now under private management, became an increasingly appealing complement, to the port of Durban, which could serve Gauteng and the booming province of Mpumalanga in Northeastern South Africa. The viability of the Maputo Corridor grew stronger as a major South African freight forwarding company became a stakeholder in the management of the port of Maputo in 2009. This development increased South African control over the logistics of the corridor and held potential to secure a significant increase in the number of conference liners calling at the port.

¹¹ In 2004, out of a universe of 181 countries, South Africa ranked 32 in the general ease of doing business worldwide but only 147 on the ease of trading across borders (Doing Business, 2004). In 2005, expenditures on transport and logistics in RSA were equivalent to 15.7% of GDP, almost double the figure for India, Brazil and Australia (CSIR, 2005).

The economic rationale to integrate the Maputo Corridor into the South African transport network has been subscribed primarily by the private sector, mostly driven by the need to identify more cost-efficient transport and logistics in the region. Despite a high level political support for transnational transport corridors, as part of a broader commitment to regional integration, and consequently economic and political stability, more limited support has been provided by the South African government as evidenced by two ongoing challenges faced by the corridor: the difficulty in sustaining a public-private partnership between Transnet, CFM (the Mozambican parastatal) and the private sector to develop and manage the Ressano Garcia railway to its full potential, and delays in opening the one-stop border post that would render the Maputo Corridor a competitive gateway for South African companies' shipping needs. In fact, as the corridor gained currency among the business sector, Transnet began to invest heavily not only in upgrading the competing Ports of Durban and Richards Bay, but also in developing new ones such as the Port of Coeqa in the Eastern Cape. To secure traffic to these ports, which remain fully (or partially in the case of Richards Bay) under its control, Transnet appears to adopt a pricing scheme of "equalizing discrimination" for all rail, subsidizing certain routes at the expense of others.

The integration of transport parastatals in South Africa under the Transnet umbrella enables complex cross-subsidization scheme in which the growing losses of the rail were offset by the high profit of the port. The full extent of these practices and their impact on Maputo Corridor is however difficult to ascertain given the lack of an official tariff schedule for any rail corridor. At present, Transnet's preferred model is one that allows the company to discriminate its pricing across corridors and users, as prices are negotiated on an ad hoc basis between the parastatal and the shippers. Ultimately, the uncertainty about how Maputo Corridor would affect traffic on other South African corridors and the financial sustainability of the parastatal may have at first damp-

ened the resolve of both Transnet and the South African executive to fully commit to the development of Maputo Corridor.

These historical circumstances can partially explain the prominent role played by the private sector in spearheading the development of Maputo Corridor, as well as the wavering support received by the South African government during the initial stages of its development.

Given the high capital requirements to repair and rebuild the transport infrastructure of Mozambique after the end of the civil war, private sector involvement was necessary. At the same time, the fall of apartheid in neighboring South Africa led donors and multilateral agencies to favor transnational economic initiatives that would sustain regional peace through economic integration. From a political perspective, the SDI model became an attractive strategy, which could directly bolster GDP, employment and local fixed investment in Mozambique, while serving as a commitment device for regional integration and the normalization of economic and political relations between the two countries. Given its transnational reach, it would also secure concessional lending from multilaterals—a necessary condition for an overhaul of the Maputo Corridor.

Several factors shaped how the rehabilitation works took place. The 80s and 90s brought fast-paced technological change in the form of containerization, which significantly altered the production function of ports. As a result, the rehabilitation of the Port of Maputo became particularly capital intensive, requiring only a flexible and small labor force. Stevedores, who in the past were called upon to coordinate and undertake complex processes of loading and off-loading, were now substantially less important for harbor operations. While in Durban, the strength of dock worker unions had avoided retrenchments and privatization in face of technological changes, there was no tradition of unionized dock workers in Maputo. As a result, its privatization and the downsizing of its workforce became a viable strategy. These were also

requirements for the country to benefit from concessional lending to rehabilitate the port.

The involvement of the private sector in the rehabilitation and management of the corridor from the very early stages was meant to give an impetus to the trade dimension of the corridor, relative to the more common *public works* approach of the public sector. The goal was for the private sector to engage in targeted investments that would reduce transport costs and promote a model of trade-led regional growth. The role of the public partner was to realize the investments in soft infrastructure needed for the corridor to generate the volumes that would make the private concessions attractive.

The public-private partnerships (PPP) established in the early 2000s for the Maputo Port and the Ressano Garcia Railway fell, however, short of delivering the intended results. This outcome may have been driven by several factors. First, misguided forecasts of demand for transport services in the corridor (at least in the short run), and misinformation on the actual state of disrepair of the rail and port infrastructure when the contracts were signed, decreased the private sector's willingness to fulfil its contractual obligations. Second, while the actual contracts have not been made public to allow scrutiny, the private parties to the contracts maintain that they were poorly designed, prioritizing immediate revenue flows to government in the form of fixed fees paid by the private concessionees relative to the variable fees that would be contingent on the actual volumes handled.

Lastly, an inherent tension in the first wave of transport PPPs was created by a clear conflict of interests in the management of the concessions: the public authorities, in the form of CFM, was simultaneously the regulator, the concessionaire and the concessionee in the partnership. The lack of an institutional oversight body to regulate the terms of the partnership and enforce the obligations of each party is therefore likely to have played an important role in its failure. The port agreement was

reconfigured to bring in a new set of players in the late 2000s while in the case of the Ressano Garcia Railway, the PPP was scrapped altogether in favor of renewed control by the public entities party to the original agreement, Transnet and CFM.

Altogether, the absence of a solid institutional and legal framework for PPP contracts to provide the right incentive structure for the different players, coupled with the poor state of the infrastructure and the inherent complementarities associated with the main components of the corridor, illustrate the complex interplay of physical, institutional and political capital required to sustain PPP arrangements for transport in the region.

3. The institutional dimension of corridor development

The challenge for managing the development of a corridor is to adopt an adaptable and flexible institutional framework that takes into account the life cycle of that corridor to ensure effective coordination of all relevant stakeholders. Coordinating and managing investments or improving corridor logistics are activities that differ in nature. They require the involvement of a different set of stakeholders and follow a different process to achieve a different set of objectives.

The Maputo Corridor started with the development cycle, and when most of the infrastructure restoration and modernization was completed, focus shifted to operational efficiency, before entering a new consolidation phase combining the two cycles. However, the transition was not a planned and managed process, and at some point, there was an institutional vacuum in terms of a mechanism to lead from the development cycle to the operational one. Rather, a private-sector initiative assumed the lead for that cycle, and its main actors are now planning and managing a second development cycle for the corridor.

Stakeholder involvement in Maputo Corridor

The Maputo Corridor passed through discontinuous phases: (i) the development stage, from 1995 to the mid-2000s, and (ii) the operational stage, from 2003 to date. It could be argued that the corridor entered into a third phase in 2012 – a hybrid between the development and the operation phase – with the launch of a new major investment program for the development of the port. During each period, the objectives, the focus, and the nature of the stakeholders involved differ. The emer-

gence of MCLI was not a consequence of the completion of the development cycle initiated by the SDI initiative: it was established to address the logistics bottlenecks on the Maputo Corridor from a corridor user perspective, to open up transit flows through the port from the South Africa hinterland of the corridor.

The early years – the Maputo Development Corridor

The Maputo Corridor founding act was the signature of an agreement for its revival by the Ministers of Transport of South Africa and Mozambique, Mac Maharaj and Paulo Muxanga in 1995. However, although the initiative originated from the transport sector, the South African Department of Trade and Industry (DTI) quickly took a leading role. The Department was coordinating the SDI program with the other concerned South African government departments, parastatals (Transnet, and more particularly its port – Portnet – and railway – Spoornet – divisions), with investment agencies and institutions (Development Bank of Southern Africa, DBSA and Industrial Development Corporation, IDC). A Maputo Development Corridor unit was established within the SDI unit to develop the portfolio of projects with input from DBSA and IDC for presentation during the investors' conference of May 1996.

According to the SDI methodology, the following phase was to be the 'exit strategy', or the establishment of a specialized local institution that would take over the identification of projects and the subsequent dialogue with private investors to perform the function of a corridor dedicated investment promotion agency.

During its earlier years, the corridor conformed to a relatively narrow notion of spatial integrated development focusing on investments. Given the short timeframe for project implementation, the coordination costs of transnational governance, the weakness of provincial bureaucracies, particularly on the Mozambican side, and the attempt to share

the responsibility for its development with the private sector, a predominantly project-driven approach was adopted, as opposed to a consistent effort of institution building for sustainable policy-making. In order to jumpstart growth and avoid cumbersome or difficult coordination between weak provincial bureaucracies, the planning, its management and monitoring were all removed from the local level.

Consequently, the process of establishing the Maputo Corridor Company (MCC), which was supposed to take over after the ‘exit strategy’, was delayed, while DTI was partly removed from the picture when the responsibility of coordinating regional SDIs was transferred to DBSA.

Similarly, the corridor fell short of furthering significant inter-ministerial cooperation, resulting in frequent clashes between the Ministry of Finance, the Ministry of Transport, the Ministry of Planning of Mozambique on one hand, and the Departments of Transport, Trade and Industry and Public Enterprise of South Africa, on the other hand. There were also occasional disagreements between the different stakeholders and changes in the political landscape as some of the key political champions of the initiative, notably when the premier of Mpumalanga – Mathews Phosa – exited the political scene¹².

Bottom-up coordination and capacity building at provincial level for corridor development should in principle provide more guarantees for the sustainability of the SDI model. However, the Mozambican experience so far suggests that a clear limitation of the model—insomuch as it can contribute to institutional capacity only when local conditions, are

¹² Some of the most far-reaching public sector support programs, which included land reform, rural development and urban housing policies in line with the developmental goals of the corridor, were spearheaded by the provincial leader of Mpumalanga, Mathews Phosa. His departure in the late 2000s led to the revocation of this broader mandate for the MDC.

relatively favorable to begin with. While the success of the corridor was in part due to its ability to bypass existing institutional constraints, the question remains on whether this is a sustainable path to development. It is also possible that this strategy distorts the type of successful investments; an agricultural or tourism project will be heavily reliant on local governments to succeed while a larger industrial or mining business clustered around countrywide transport networks will not.

2003 and beyond: the Maputo Corridor Logistics Initiative

The failure of the MCC to take off left a vacuum, rendering private and public sector dialogue over time increasingly difficult and ineffective. It became imperative to establish an organization capable of uniting and aligning private and public sector interests across both countries. At that time, most of the major investments along the corridor were either already showing results (MOZAL, N4, etc.) or were finally on the right track (the port concession was effective); it was time to shift the focus on improving the operational performance of the Maputo Corridor. This background led to the emergence of the Maputo Corridor Logistics Initiative (MCLI) in 2004, which was established by eight founding members¹³ comprising of private sector investors, service providers and cargo owners operating along the corridor.

The main goals of MCLI were to revitalize the corridor as a key transport route for a broad hinterland, remove physical and non-physical barriers to trade, generate awareness of corridor developments among potential users, unify communities of stakeholders around a

¹³ The eight founding members were MPDC (Maputo Port Development Company), MIPS (Maputo International Services), TCM (Coal Terminal Matola), TRAC (Trans-Africa Concessions), MMC (Manganese Metal Company), TSB, TAL and later, the Department of Transport of South Africa, which joined MCLI in 2006.

common goal, coordinate investments that crossed multiple jurisdictions and establish *Focus Work Groups* and *Operational Efficiency Working Groups* to act as platforms for the resolution of operational inefficiencies. The founding members were guided by the need to coordinate sustained investments in both hard and soft infrastructure, which required at times working across multiple jurisdictions, and to speak with one voice to the Mozambican and South African governments.

While its private sector members represented some of the key industries with a stake in the corridor, it soon became clear that the Board would also have to include representatives from the public sector. The South African National Department of Transport recognized MCLI as an institutional framework for public-private consultation and joined in as a founding member in 2006. A wide spectrum of stakeholders from South Africa, Mozambique and Swaziland have since joined, ranging from members of public departments to cargo owners, road haulers, intermodal operators, rail service providers, logistics companies, clearing and forwarding agents, shipping lines, port agents, shipping brokers, financial institutions, and border post management authorities. Most of these members joined to be kept informed on developments along the corridor (through MCLI events, newsflashes, etc.), to gain access to business networking opportunities¹⁴ and be able to express their preferences on the prioritization of investments in the corridor.

To reflect the need to broaden the interests represented within the institution, the highest decision making body is the MCLI Board of Directors. The Board consists of nine executive directors – the founding members – and nine non-executive directors, predominantly from organized businesses in South Africa and Mozambique, as well as both

¹⁴ Particularly for private companies providing transport and logistics services along the corridor, membership in MCLI would entail participation in the Maputo Corridor Service Provider Directory.

countries' investment agencies. The Board of Directors established ad hoc committees to address specific issues affecting the operational performance of the corridor. These committees were tasked with documenting key corridor bottlenecks from the perspective of private users, and with lobbying the respective government agency for important changes to take place. MCLI maintained a high visibility to support advocacy through presentations on the Maputo Corridor delivered at international and regional conferences and fact-finding missions along the corridor. It also kept in constant touch with its membership base through a series of satisfaction surveys and pulse-sensing events. As illustrations of the MCLI approach, the committee on the Komatipoort/Ressano Garcia border post successfully lobbied for the extension of working hours for commercial cargo at the border post (up to 10 pm as discussed in Chapter 2) and the creation of the freight bypass, and is participating in the discussions over the one-stop border post; the committee on rail participated in discussions related to increasing railway capacity and operational efficiencies, while documenting the potential market for rail services along the corridor. Additional committees have attempted to lobby for increased supply of ocean shipping at the port of Maputo, or provided a framework to ensure that MCLI is correctly integrated and recognized in the broader African Union, NEPAD¹⁵, SADC and national and provincial governments.

¹⁵ MCLI was awarded one of three prestigious NEPAD Transport Infrastructure Projects of Excellence Awards for the Maputo Development Corridor during the NEPAD Transport Summit held in Johannesburg in November 2009 and the Platinum Logistics Achiever award in 2011.

Box 2. The role of MCLI in the revision of the Mozambique Transit Law

Current focus groups are working on the pressing issue of transit regimes and customs' regulations. The issue of the transit regime constitutes an example of successful stakeholder mobilization. The Maputo Corridor is primarily serving its close South Africa hinterland. Compared to direct routing through South African ports, passing through Mozambique implies a Customs transit regime. The constraints of transiting an international border, compounded with comparatively low volumes and the imbalance in trade, constitute an obstacle for the development of traffic along the corridor.

The MCLI had documented the main constraints and their impact on the competitiveness of the corridor. Taking advantage of a review of the Mozambique Customs Law undertaken by the Government of Mozambique to facilitate the implementation of the Single Electronic Window System in Mozambique, the World Bank¹⁶ provided support to MCLI for consolidating the collective input of all stakeholders for modifying the areas of the legislation, which were negatively affecting the efficiency of the corridor.

The key recommendations from the stakeholders for changes to the Mozambican transit regime covered five universal components of a transit regime: (i) Customs Transit Regulations (CTR's), (ii) bonds, (iii) manifests, (iv) transit process authorization, and (v) stakeholder engagement. The recommendations were well received by the Government of Mozambique, and incorporated into the revised legislation, which was ultimately approved by the Parliament and published in October 2012. As the legislation is applicable to the whole country, not only it will have a positive impact on the competitiveness of the Maputo Corridor, but it will also have positive spillover effects on the other transit corridors of Mozambique, especially through the ports of Nacala and Beira.

Post 2012: A new cycle for MCLI

While in its early years, activities of MCLI were primarily issue driven, enabling its collective membership to have more clout and a louder voice in the network, it is now attempting to shift to a more hybrid model of action that includes a sectoral approach to challenges along the corridor. This evolution is linked to the launch of a second cycle of

¹⁶ Through a grant from the Trade Facilitation Facility (TFF) implemented by SSATP.

large investments along the corridor, notably terminal expansion at the port to accommodate larger volumes of traffic. That implies expanding the range of stakeholders to include those traditionally involved during the development stage—more diversified towards public entities membership than is currently the case. This shift is timely, as it provides the opportunity to bring coherence in corridor development in the broader regional context.

Box 3. The Techobanine Port Complex

The regional context is witnessing a potential major change, as a new port complex is planned at Techobanine some 70 km South of Maputo. A MoU signed in April 2011 between the Governments of Mozambique, Botswana and Zimbabwe aimed at developing a deep-water port serving the three countries. With a publicized \$7 billion dollar investment, it would become the deepest port in Mozambique suitable for deep draft ships, and expected to handle as much as 100 million tons per year. The port complex would include industrial development (11,000 hectares), a strategic reserve for fuel, and focus on mineral exports and container traffic. A railway line would link the port to Botswana and Zimbabwe through Chicualacuala in Gaza province, in Mozambique.

At present, the development of the Techobanine complex is being managed by CFM, the government of Botswana and private investors. The project is still at a pre-feasibility to feasibility study stage, and negotiations between the private investors and the Governments failed to reach an agreement so far, and the topic is further obscured by the possibility to route the coal exports from Botswana which form the backbone of the Techobanine project through Namibia¹⁷ instead of Mozambique, as well as by several environmental concerns, as the port and the railway line impact several conservation areas.

The impact of the Techobanine Corridor on the operations and trade volumes handled by the Maputo Corridor is unclear. In the absence of additional investments, increased cargo traffic in the region may further tax the already insufficient capacity of road and rail networks. Rolling stock is already scarce in the Maputo corridor railway and the road infrastructure in Southern Mozambique outside of the EN4 is still in very poor shape. Although it seems unlikely considering the latest developments that the port complex will materialize, taking into consideration regional development and strategies of neighboring and possibly competing corridors is important for Corridor Management institutions.

¹⁷ An agreement was signed by Botswana and Namibia in March 2014 for the development of a 1,500 km long railway line.

Mechanisms for coordination

Organizational and structural challenges of a Corridor Secretariat

In the operational stage, both the number of stakeholders and the number of possible challenge areas increase. The mechanism required for coordination is no longer a project unit within a public institution, but instead there is need to clearly identify a hub organization capable of both harnessing the collective input of all pivotal stakeholders and of setting the agenda for future development to constitute the forum that will maintain that cooperation. The challenge then becomes one of establishing and sustaining institutions that are simultaneously flexible, targeted and adaptive to these different degrees of collaboration.

MCLI was established as a not-for-profit organization in South Africa (Section 21 Company under the South African Law). Despite significant success, MCLI now faces several organizational and structural challenges. One of the key challenges is financial sustainability. MCLI is funded by annual contributions from its members, and sustainable funding can only be secured by maintaining or expanding its membership base to interested stakeholders¹⁸. The main challenges then become a fluctuating membership base and the inability of certain members to pay regular fees¹⁹. Moreover, a fluctuating member base may create discontinuities in support for corridor initiatives as certain private sector entities remain actively involved until their key objectives are met and government organizations experience high turnover of staff, with varying lev-

¹⁸ Contributions are mainly determined by the size of the organization measured in terms of the number of employees. About 6% of the membership is transient, with MCLI gaining and losing approximately 10 members each year.

¹⁹ An alternate funding model for CMI is the one implemented by the Northern Corridor Transit Transport Coordination Authority, a levy on transit cargo covers the major part of the operating budget of the Secretariat, while national Government contributions now represent only a minor component.

els of commitment to solving the challenges faced by the corridor. Expanding its member base and introducing a user-pay model (a concept which is contentious in South Africa and unacceptable by some) could potentially increase the range of activities MCLI could undertake, such as implementing a rigorous monitoring and evaluation system of its impact - which is critical to market the cost-effectiveness of corridor management. The user-focus would also ensure that MCLI is highly attuned to the needs of its members, constantly reinventing itself to identify high-value added services, and to remain accountable to its paying members.

A second structural challenge faced by MCLI is the need to graduate from a *de facto* private sector organization to a full-fledged, institutionalized, multinational private-public partnership. The goal of this upgrade is twofold: to ensure the financial viability of the organization by committing government and private funding, and to make sure that this financial commitment, on behalf of the public sector, provides more political clout to the organization and enables MCLI to hold government accountable for its role in the development of the corridor. The multinational character is essential to ensure credibility in the non-partisan alignment of the Corridor Secretariat. While the incorporation under the Section 21 Law provided the necessary legal framework for the organization to operate, it came at the cost of a general perception of MCLI being solely a South African entity, pursuing South African interests, although membership and active participation comes from both sides of the border. To combat that perception, the Secretariat tried to establish a more permanent presence in Mozambique, but with limited resources. The main lesson is that multilateral legal instruments establishing corridor management institutions are more appropriate to the nature and mandate of the institution, and are indeed the path followed by most African corridors.

Informing the policy dialogue

Despite the heightened awareness of the importance of transport costs and how it affects all spheres of economic activity, the challenge that remains is one of adequately identifying the drivers of direct and indirect transport costs, and understanding how they affect firms and the economy at large. Countries and donors still struggle with how to prioritize investments in different types of infrastructure; how to undertake financially sustainable investments; how to measure demand for different transport services; how to identify shortcomings in the soft infrastructure of transport and their interaction with inefficiencies in hard infrastructure; and on how to measure the impact of these investments on development and growth.

Most of the challenges discussed in Chapter 2 are aggravated – if not fully caused – by the lack of timely and accurate data on corridor traffic flows, transport prices, transit times; actual demand for transport services; and by the lack of transparency in development plans and contractual arrangements guiding corridor development and management. This prevents the timely and proactive identification and removal of obstacles to the movement of cargo; reduces the commitment of parties to PPP arrangements given the lack of public scrutiny and accountability; limits awareness of positive developments along the corridor that could attract new demand and significantly decreases the ability for management authorities to decide on how to prioritize investments.

In the case of the Maputo Corridor, data and information is currently captured by different stakeholders following different metrics and overall data management strategies. This often leads to contradictory evidence being propounded by different agencies. Moreover, data tend to be proprietary preventing adequate coordination and harmonization of collection, management and processing strategies across stakeholders.

The solution to the problem of data collection and dissemination can take different forms. In some cases, transport observatories have been set up across the sub-continent to aggregate data on corridor development. The experience with these transport observatories has, however, been mixed. In most cases, these transport observatories lacked the institutional and political clout to make data sharing compulsory, and as a result have struggled with the unwillingness of different private and public agencies to share relevant data. Alternatively, this responsibility has fallen within the jurisdiction of a public-private organization, as was the case for MCLI and the Maputo Corridor. MCLI has however also struggled with the ability to extract data on a timely manner from the different stakeholders. This challenge has severely limited the organization's capacity to ascertain bottlenecks beyond the identification by the corridor users, individually or through the focus groups to raise awareness for corridor development and attract new users, and to devise a long-term strategy for the growth of the corridor.

An emerging model for corridor management institutions

All things considered, a sustainable and effective management of transport corridors in the long-run requires adequate institutional framework: a structure involving public and private entities committed to the efficiency of the corridor so as to maximize its role as asset for economic growth; a structure that will guarantee that the problem of its sustainability is solved, which will give in turn the resources required to expand its functions from advocacy to development planning.

Among all the corridor institutions in existence, the corridor agenda was driven at their inception in some cases by an appointed inter-governmental Corridor Management Authority (as was the case for the

Mombasa and Dar-es-Salaam corridors NCTTCA²⁰ and CCTTFA²¹ respectively), and in others by private associations supplemented with ad hoc interventions by regional and central governments (as was the case for the Maputo and Walvis Bay corridors, MCLI and WBCG²² respectively). However, with time, those two broad categories shifted to a hybrid organization which combines traits from both.

²⁰ Northern Corridor Transit Transport Coordination Authority, an intergovernmental institution comprising Burundi, Democratic Republic of the Congo, Kenya, Rwanda, Uganda, and South Sudan.

²¹ Central Corridor Transit Transport Facilitation Agency, an intergovernmental institution comprising Tanzania, Rwanda, Burundi, Uganda and the Democratic Republic of Congo.

²² The Walvis Bay Corridor Group represents the group of corridors radiating from the port of Walvis Bay, serving Namibia, Botswana and South Africa through the Trans-Kalahari; Namibia, Zambia and Democratic Republic of the Congo through the Trans-Caprivi; and through the Trans-Cunene, Namibia and Angola.

Conclusions

The Maputo Corridor is an evolving corridor in an ever-changing environment, and is yet to fully mature and stabilize. Drawing final conclusions on the success or otherwise of the corridor would be still premature under those circumstances. Still, it is worthwhile to reflect on its evolution over the past almost two decades and learn from its achievements and apparent shortcomings.

Clearly, several of the original objectives of the Maputo Corridor revival have been achieved: (i) the current traffic activity of the railways and the port has reached the pre-independence levels, and prospects for sustained growth are bright, with increasingly well integrated markets (regional trade has expanded and any consumable that can be found in South Africa is now available in Mozambique); (ii) the core corridor transport infrastructure has been rehabilitated and expanded, with a port that will see its capacity double over the coming years, with sustainable funding to maintain the road infrastructure, and with commitment from railways parastatal to develop rail services and capacity; and (iii) private sector investment in large economic anchor project has been realized.

However, on a few other counts, the corridor is a work in progress and the results are not yet clear. A case in point is the institutional framework for the corridor, which has not evolved as initially planned. Rather there has been adaptation and the emergence of pragmatic solutions. When the investment-driven phase failed to evolve, it left a void that had become detrimental to the proper functioning and further development of the corridor.

Table 5: Lessons from the Maputo Corridor

	<i>Strength</i>	<i>Challenge</i>
Traffic growth on the corridor	Traffic on the corridor and at the port dramatically increased, and will soon surpass its historical maximum Bilateral South Africa-Mozambique trade expanded	Traffic growth at the port has been mainly in the intensive margin, and is largely mining based, with limited spillover on other sectors and general cargo volumes of overseas trade
Private sector investment in economic anchors	Several major investments in economic anchor projects kick started its revival Critical involvement of regional financial institutions (IDC and DBSA)	A few investment failed to materialize (defaulting investors, changing global strategies), highlighting the uncertainty of over reliance on a single project or major investors
Investment in infrastructure	N4 toll road concession Current Maputo Port concession and private terminal operators	Early instability in shareholding of the Maputo port company Role of parastatals in rail and port investments and operations
Institutional framework for corridor management	Emergence of MCLI with broad support from all types of stakeholders	The transition from investment driven to corridor challenges driven was not exactly managed nor planned, and issues remain on corridor coordination. Moreover, sustainability of the current corridor institution, MCLI, is still largely fragile
Regional versus national strategies	Conjunction of interest with the end of the Apartheid era and the peace agreement in Mozambique for the two countries to turn a new page and re-forge links Regional consensus on the corridor approach (SADC) and the role of private sector in transport	Lack of clear interest for the conversion of the Ressano Garcia border post into an OSBP Evolving priorities for South Africa and Mozambique Difficulty and lengthy alignment of strategies between the two railway parastatals in South Africa and Mozambique
Replicability	The Maputo Development Corridor served as blueprint for regional SDIs and the approach gained momentum throughout Africa	Prevailing (favorable) corridor conditions are more critical in the success of similar initiatives than the recipe itself

For the Maputo Corridor, the creation of MCLI filled that void. That in itself is an illustration of the high level of investment the private sector has in the corridor, that there is a continuous search for practicable measures to address strategic and operational shortcomings.

All this has a bearing on the possibility to use the Maputo Development Corridor as a blueprint to replicate on other corridors: the ingredients – the prevailing conditions existing on each corridor – are ultimately equally as important as the recipe itself—the SDI formula.

It can be concluded from the review of Maputo Corridor that success requires flexibility, committed partners and dialogue, on top of a prior favorable ground (on the political and economic fronts). It is necessary to develop an efficient corridor secretariat to sustain the process, one adaptable to the corridor cycles. Involving the private sector is important, but involving the correct partners is paramount. Finally, the alignment of strategies of the corridor countries—a pre-requisite for launching a corridor, must be maintained throughout its life.

Traffic on the Maputo Corridor

The port of Maputo was until recently playing the role of a feeder port, as a satellite of Durban, which is established as the regional transshipment hub in Southern Africa. It was anticipated that traffic growth along the Maputo Corridor would help upgrading the status of Maputo to main port. Although the volume of freight increased dramatically at the port with the launch of the Maputo Development Corridor, that increase concerned mainly the bulk segment, which obeys to a different kind of dynamic than liner shipping cargo.

The hinterlands of the ports of Maputo and Durban are largely overlapping, and there are no incentives for shippers to take the possibly shorter route to Maputo if they have to face additional time and costs when cargo has to transship in Durban to connect with a main line.

Having direct main line calls is therefore a critical condition for the development of container activity at the port, but shipping lines tend to adopt a cautious approach to line programming, and usually follow but also influence cargo flows. So far, attempts to introduce Maputo as a direct port of call on mail lines have been timid.

The development of mining projects and ore-based industries (such as MOZAL) along the corridor had a major impact on the GDP of Mozambique, but the spillover effects to other sectors of the economy and contribution to job creation has been rather limited. The mega projects clearly raised government revenue flows, but have had a concentrated effect as they are capital intensive. On the other hand, the impact of the projects on shipping connectivity can be the transmission mechanism for wider effects. Improved connectivity results in more shipping lines competing, and therefore lower freight rates, and generally a wider range of ports connected via direct lines. That improved connectivity, through lower shipping costs and greater opportunities to reach a wider range of markets, tends to increase the competitiveness of a greater number of shippers (farmers, industries and traders) in the hinterland of the port, and is intuitively likely to have a more distributed impact than mega projects. However, the challenge of building upon a primarily mining driven port expansion to develop container shipping has not yet been overcome in Maputo.

Investments in economic anchors and transport infrastructure

Private and semi-private sector investments in economic anchors and transport infrastructure played a critical role in the revival of the Maputo Corridor. It successfully managed to attract large private investment in anchor projects, and regional financial institutions played a key role in that success. The project identification and preparation was conducted with teams that included IDC and DBSA. Those institutions also

participated in the shareholding of several of the major projects, guaranteeing and securing public support when needed.

However, there is no one-size-fit-all model for successful private sector participation: several models coexist on the Maputo Corridor, with successes and failures in all models: the common BOT (Build-Operate-Transfer) type of approach used for the N4 highway worked for the Maputo Corridor but there is an uneven history of BOT concessions elsewhere in Africa; another type of concession, the joint-venture between concessionaire and strategic partner worked well for the port of Maputo, but not for railway line between Mozambique and South Africa. The industrial investments in the economic anchors are more straightforward. Above all, finding the right partner (i.e. a strategic partner, which has long-term commitment to developing the corridor as it fits its regional strategies) seems to be the key and at any rate more important than the form of involvement or the concession model used. On the Maputo Corridor, the right partners were TRAC for the N4 concession, Grindrod and DP World for the port of Maputo, and the parastatal companies for the railway.

The complementary investment in transport had an uneven history: the only concession which has not been restructured is the N4 toll road; the two others – port and railway line – have been, although for slightly different reasons. It is significant that both port and rail concessions were structured²³ in a similar manner, the conceding entity (CFM for both port and railway line) was by design part of the operating concessionaire, formed as a joint venture between the parastatal and a strategic partner with proven (at least that was the stated objective) technical and financial capability (Spoornet for rail, and a consortium of port operators and civil engineering company for the port). This model has been

²³ It is worth noting however, that most railway concessions across SSA have been renegotiated after initial signing.

applied throughout Mozambique, for the other ports and railway lines managed by CFM.

Having one entity play the role of regulator and as operator goes against recommended best practice. This poses two major risks: a conflict of interest for the parastatal, and the asymmetry between the parastatal and the strategic partner when large investments are required either to restore service or develop capacity when demand increases. However, on the Maputo corridor, those risks did not materialize, and the instability was rather on the side of the strategic partner who was not able to deliver on promised investments.

In South Africa, ports and railways are integrated under a single parastatal, Transnet, which is an instrument for achieving South Africa's strategic vision for national (and regional) development for freight, notably using targeted cross-subsidies between business lines to reach its goals. From a South Africa perspective, supporting the development of the Maputo Corridor as overflow for South African ports at a time those were congested was rational, and so was at a later stage switching its strategy to support the development of Coega, which was developed to relieve the pressure on Durban and become the regional transshipment hub.

For the port, the instability was a casualty of the global concentration in the container terminal and shipping industry: the European strategic partner was absorbed by a financial and real estate group, and Mozambique ceased to be strategic. Fortunately, that strategic partner was replaced by a stronger group combining the technical expertise of a global terminal operator and the expertise and regional focus of a South African logistics group. As a result, the port emerged in a much stronger position than under the original agreement.

The main lesson is that the right strategic partner for transport concessions has long terms commitments to developing and managing the

infrastructure; the challenge is then to design a concession process that enables identifying and involving that partner.

Institutional framework for corridor management

The institutional framework for the Maputo Corridor is the result of an ad hoc adaptation to circumstances rather than of a carefully planned roadmap; it however proved so far to be effective but remains fragile. According to the SDI methodology, once the development phase of the corridor, driven by the investment projects, has reached maturity, it is time to transfer the management of the corridor to local / provincial (public) institutions. In the case of the Maputo Corridor, there were changes during the development phase, with the transfer of the Regional SDI unit from the South Africa DTI to DBSA, and the transfer to provincial institutions never took place. Instead, a coalition of shippers and logistics operators was formed to lead the operational phase of the corridor, later joined by public national and provincial institutions and an increasingly wider range of stakeholders. Thus was finally achieved the aim of having a corridor based institutions with an inclusive participation from all categories of stakeholders, but the route to this aim was rather indirect.

An efficient corridor secretariat needs to engage all relevant stakeholders, even though the set of relevant stakeholders may vary over time. During the development cycle, the functions to be performed by the secretariat are similar in nature to FDI (foreign direct investment) promotion, with mainly public and financial institutions as the main relevant stakeholders. During the operational efficiency cycle, the focus is on correctly diagnosing bottlenecks and fixing the problems, with mainly corridor users and logistics service providers. On the Maputo Corridor, MCLI has emerged as a successful corridor management institution, which maintains a high level of stakeholder engagement, with a broad based membership that enables it to perform its role for the two

cycles of the corridor. However, its sustainability is not yet assured, as the issue of mix of expertise required, mandate, and resources needs to be addressed. It is necessary to turn to other corridors to find out how to best ensure the sustainability of the corridor secretariat.

The current corridor management institution, MCLI, has three main interlinked challenges to face: the fit between its status and mandate, the organization of the secretariat, and its sustainability. MCLI was formed as a not-for-profit association under the South African law, and as such, its role with regards to government (national and provincial) institutions and initiatives is unclear. Largely a consequence of its form as an association, the corridor secretariat is a lean structure, with an emphasis on coordination and advocacy rather than on program management. It relies on input from its members, channeled through committee work. While this engenders greater user participation than on other corridors, there is still a lack of a robust monitoring framework and the capacity to develop policy papers, prepare and package projects. The issue of resources is central in whether adding those functions is desirable and possible, and one of the priorities is certainly the definition of a stable funding model for the secretariat.

In terms of corridor management institution, the initial MCLI model driven by corridor users represented one extremity of the spectrum. At the other extreme are corridor bodies, dominated by inter-governmental organizations. Over the past few years and as shown above, MCLI has moved more towards the middle, as a mix between users and public sector agencies. The inclusion of national and provincial government institution in the membership marks a shift towards a hybrid model, and a converging movement is also observed for institutions at the other end of that spectrum, confirming that institutions with ties in both the public and the private sectors are best suited for corridor management.

A blueprint for corridors

The SDI approach has been applied to an increasing number of potential corridors, national or regional, in Southern Africa. Some of those initiatives were successful, yet others have not concretized. At continental level, a total of 42 corridors have been identified in PIDA (and the list is growing), which is beyond the number of corridor routes with significant trade, and far beyond the number of corridors with a formal institutional framework for inter-country cooperation to drive development. To a large extent, it is expected that the SDI formula will be applied to develop infrastructure, generate growth, or both. However, the experience of the Maputo Corridor as model and prototype of a regional SDI should not mask the fact that all the fundamentals were right / favorable in the first place.

On the political level, South Africa was emerging from the apartheid era and the isolation resulting from the international sanctions, particularly from its immediate neighbors. The Maputo Corridor was providing the opportunity to reach out and establish a new and constructive form of relationship with its neighbors. Similarly, Mozambique was coming out of a long conflict, and needed to reconstruct its economy. That alignment of interests combined with the coincidence in time has been essential in lifting the profile of the Maputo Corridor to the highest political level in both countries. On the economic rationale for the investment, there were no doubts or concerns on several major critical projects: the traffic volumes and the ability to pay were proven for the concession of the road, and mining-based projects have sound demand projections. It is the presence of those two fundamentals that constituted the favorable ingredients on which the SDI recipe could work.

When the economic potential is more diffuse, for instance for tourism or agricultural and agribusiness, or when the political wills are less aligned (with imbalanced benefits between the countries over which the

corridor is spanning for instance), the SDI formula is likely to be more delicate to apply, or even may not be sufficient to catalyze development.

Ensuring alignment of regional and national strategies right from the beginning is important, but it is also essential to maintain that alignment over time. National, regional and political strategies evolve and may take divergent routes over time. In addition, the changing regional context outside of the strict geographic scope of the corridor may still affect its development or influence its strategies (for instance, the competing or emerging corridors, the incidence of REC master plans and regional instruments, and the spatial national strategies). An essential role of the Corridor Secretariat is to be the forum that ensures that regional dialogue between countries, provinces and corridor users, is maintained and regional commitments adhered to.

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Internet resources

Maputo Corridor Logistics Initiative: www.mcli.co.za

Port of Maputo MPDC: www.portmaputo.com

Mozambique Ports and Railways: www.cfm.co.mz

N4 toll road: www.tracn4.co.za

South Africa Railways: www.transnetfreightrail-tfr.net

